Typhoon, July 6-16, 1940.—A well-developed typhoon appeared about 300 miles south of Guam, July 6, moved northwest, then west-northwest, and inclined to the north when the center reached the ocean regions about 500 miles east of northern Luzon. This northerly course soon became north-northwest, and the storm moved into the Eastern Sea, passing about 60 miles west of Naha, Nansei (Loochoo) Islands. Recurvature took place over the central part of the Eastern Sea and the center soon reached the Sea of Japan on its way to the northern Pacific Ocean.

The steamship Coldbrook experienced the strength of this typhoon and sent many observations to Manila on July 11 as the center passed close to and east of the ship. Of these observations, that with the lowest pressure was made at 0400 GMT (noon, Manila time), latitude 21.6° N., longitude 128.5° E., 959.0 mb. (719.3 mm.) with west-

northwest winds of force 12.

The upper winds during the period of the three storms just described showed their greatest activity over the Philippines, Indochina, and Thailand from July 4 to 13 approximately. The depression late in June was a manifestation of a quiet advance of the southwesterly current from Thailand and Indochina (and very likely from the Straits Settlements, but only scattered observations are at hand at the present writing) to the Philippines and the Pacific. The approach of the typhoon, July 2 to 9, intensified this current over Cebu, Manila, Dagupan, and Aparri, velocities of 100 k. p. h. and over being reported a few times. Zamboanga, however, did not seem to feel the effect of this strength, the velocities reaching 50 k. p. h. only infrequently. The typhoon, July 6 to 16, maintained these high velocities until about July 12 or 13, after which they diminished gradually as the storm center reached the Eastern Sea. There was no special activity in the east quadrant current at Guam during these days, as far as can be ascertained from available observations.

Typhoon, July 12-25, 1940.—This storm center moved northwesterly from the ocean regions far to the southsoutheast of Guam to the latitude of southern Formosa where it changed to the west. It recurved to the northeast when within 100 miles of Formosa, but followed a northerly course into the Eastern Sea. Korea (Chosen) was crossed and the typhoon rapidly moved northeast

over the Sea of Japan and beyond.

Until this typhoon reached the locality of Formosa and the Eastern Sea, it did not manifest the power that it seemed to have when it passed west of Guam. Observa-tions from Ishigakijima, Nansei (Loochoo) Islands, showed that the center was deep, but exerting its influence only nearby and not at a distance. The 2 p. m. observation of July 21, from this island station had 739.0 mm. (985.3 mb.) with east-southeast winds, force 8, as the center moved northerly along a course about 60 miles west of the station.

Typhoon, July 25-29, 1940.—Forming about 500 miles east-northeast of San Bernardino Strait, this typhoon moved in a west-northwesterly direction, and crossed Balintang Channel and the northern part of the China Sea on its way to the continent. It passed over the coast line between Hong Kong and Swatow and disappeared over the interior on July 29.

The steamship Kujawa Maru reported from latitude 18°20′ N., longitude 124°30′ E., a pressure of 695 mm. (926.6 mb.) with north-northeast winds of force 12, July 26, at noon. As the typhoon crossed Balintang Channel, neither Basco nor Aparri had any extremely low pressures or strong winds, indicating that the storm had weakened or was small in area.

Typhoon, July 29-August 4, 1940.—For some time before July 29, there was a low-pressure area east of the Philippines but no definite center appeared until July 29, when it was certain that a typhoon was in existence about 600 miles east of Basco. This center moved northwest, passed about 60 miles southwest of Naha and later about 60 miles northeast of Shanghai, moving in a northerly direction almost parallel to the coast line. It crossed Shantung Peninsula on August 2, but there seemed to be traces of the circulation over northern China and Man-

churia on August 4.

Observations from the steamship Hybert indicated the existence and movement of this storm, July 29 and 30. From latitude 24°0′ N., longitude 128°0′ E., the value of 994 mb. (745.5 mm.) with west winds, force 9, was reported (July 30, 6 a. m. Manila time), this being the lowest pressure value in the series of observations from this vessel. Naha, Nansei (Loochoo) Islands, on July 30, 2 p. m. reported pressure at 743.0 mm. (990.6 mb.) with east-northeast winds, force 5. The next day at 6 a. m., the steamship City of Norfolk, position in latitude 28°12′ N., longitude 125°30′ E., had pressure at 973 mb. (729.8 mm.) with east-

southeast winds of force 8.

The last three typhoons of the month should be characterized as small, exerting their influence over a small area. Compared with the two in the first half of the month, very little, if any of the activity which they manifested was found after July 15. Over the Philippines, the upper winds, southwest quadrant prevailing, hardly reached values above 40 k. p. h. Usually, it might be mentioned, there was an easterly current above the southwesterly current, the high clouds showing this often and the balloons entering it a few times. Thailand and Indochina pilots showed a weaker southwesterly current during the last half of the month. Guam did not have any strong east quadrant winds, and when the southwesterly current reached that locality for a few days the velocities were always weak. This month is interesting because of these two types of typhoons, the larger during the first half, the smaller during the latter half, and moving over similar courses.

RIVER STAGES AND FLOODS

By Bennett Swenson

During July severe flooding was confined to the Black Warrior, Tombigbee, Pearl, and Pascagoula River Basins in the East Gulf of Mexico drainage, and the lower Colorado and Guadalupe Basins in Texas. Roord rainfall in central and southern Texas on June 29-30, ranging from 8 to 22 inches over a small area, resulted in the floods in the Texas area which were most destructive in the upper Lavaca River. In the east Gulf area rainfall was almost continuous over a much longer period, lasting from June 29 to July 20 with only a few interruptions.

East Gulf of Mexico drainage.—Moderate flooding occurred in the lower portions of the Apalachicola River, when the stage at Blountstown, Fla., exceeded flood stage by 3.5 feet on July 14. The Choctawhatchee River just reached flood stage on the 10th at Caryville, Fla.

Rains were heavy over the Black Warrior and Tombigbee Rivers on July 2 and 3, causing sharp rises on the 3d. Heavy showers occurred over the upper parts of both basins every day except one, from the 3d to the 15th. The Black Warrior at Tuscaloosa, Ala., had three rises and the upper Tombigbee at Aberdeen and Columbus, Miss., had two, during the flood period. In the lower portions the rise continued in the Black Warrior until the 19th,

and in the Tombigbee, until the 25th.

The continuous rises, in the Tombigbee at and below Gainesville, Ala., and in the Black Warrior at and below Lock No. 7, were caused by additional heavy rains south of Columbus and Tuscaloosa. This rainfall also accounted for the high crests from Demopolis, Ala., southward. The high stage (38.6 feet) at Lock No. 1 on the Tombigbee, was due partly to late heavy rains northwest of that point and to the high water and heavy rain in the lower Alabama River Basin.

From a survey made by the United States Engineer Office the total losses from the floods in the Tombigbee and Black Warrior amounted to more than

\$4,000,000.

During the same period the rainfall was moderately heavy over the Alabama River watershed but was not excessive except over portions of the Cahaba and in the extreme lower portion. The only gaging station in the basin that reported above flood stage was Centerville,

Ala., on the Cahaba River, where a stage of 24.2 was reached on July 16.

The following report on the floods in the Pearl and Pascagoula Rivers was prepared by the Official in Charge, Meridian, Miss.:

Floods during the month of July are very rare in the Meridian (Miss.) river district, and are usually caused by heavy rainfall attending the passage of a tropical hurricane inland over the district. The July 1940 floods were caused by almost continuous daily rainfall from June 29 to July 20, due mostly to the fact that polar air masses were moving unusually far southward for the season. The periods of rains over the district from June 29 to July 7, and from July 11 to 14, were caused by polar air masses with attendant fronts moving over the district; while for the period of July 8-10, an area of low pressure extending to high altitudes was centered over northern Mississippi, and caused daily heavy rains in most sections.

The total rainfall over the district for the 22-day period ranged from 6.35 inches at Merrill, Miss., to 17.88 inches at Shubuta, Miss. It will be noted from an avanination of table 1, that the locations

It will be noted, from an examination of table 1, that the least rainfall occurred at the southern end of the district and the heavier rainfall in the central and northern portions. As a rule, summer flood-producing storms cause heavier rainfall in the southern and

central portions of the district.

Table 1.—Daily rainfall in the Meridian river district for the period June 29-July 20, 1940

| Bay Springs. | | | | | | | | | | | | | | | | | | | | <u> </u> | · · · · · · · · · · · · · · · · · · · | | | |
|---|--|--|--|--|---|--|--|---|---|--|---|---|---|---|--|--|---|---|--|--|---|---|---|---|
| Bay Springs. 0.52 0.60 0.00 0.55 1.96 0.52 0.18 2.46 0.70 1.92 0.62 0.16 0.10 0.27 0.05 0.70 0.16 0.00 0.00 0.91 0.06 0.48 13. Collins. 2.05 4.78 0.00 0.9 1.35 85 2.5 46 99 2.38 0.9 0.8 90 0.57 4.46 82 T 1.19 0.00 0.00 0.01 1.57 17. Columbia 1.13 1.43 0.0 0.92 2.30 3.2 0.5 61 2.36 1.3 85 0.1 45 3.2 0.0 0.3 0.60 1.6 0.4 0.0 1.9 1.88 11. D'lo. 2.20 1.05 0.0 0.0 3.5 87 43 T 53 2.27 1.50 1.9 90 2.21 1.25 2.8 T 42 21 0.1 0.6 0.0 1.9 1.8 11. Ediuburg 83 0.0 0.0 3.5 87 43 T 53 2.27 1.50 1.9 90 2.21 1.25 2.8 T 42 21 0.1 0.6 0.0 1.9 1.9 0.0 2.2 11. Enterprise 1.23 2.41 0.0 47 2.37 1.0 2.8 98 91 0.6 0.9 31 79 39 0.3 1.4 0.0 1.9 1.9 0.0 1.2 1.4 7.8 1.0 1.4 7.8 1.4 1.0 1.4 7.8 1.4 1.0 1.4 7.8 1.4 1.0 1.4 7.8 1.4 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.6 1.0 1.4 7.8 1.4 1.5 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 | Station | Ju | ine | July | | | | | | | | | | | | | | | | | | | | |
| Columbia 2.05 4.78 00 09 1.35 85 25 46 99 2.38 09 08 90 5.77 4.68 82 T 19 00 00 00 1.57 17.50 10 10 10 10 10 10 10 10 10 10 10 10 10 | | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Total |
| Meridian : | Collins Columbia Colu | 2. 05 .13 .20 .83 .1. 23 .1. 10 .18 .54 .00 .04 .30 .30 .30 .35 .2. 71 .65 .1. 87 .55 | 4. 78 1. 43 1. 05 .00 2. 41 .78 .05 .05 .70 .76 1. 83 .80 .00 .00 .45 .00 | .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 | .09 .02 .00 .35 .47 .25 .04 .00 .00 .32 .TT .05 .TT .05 .TT .26 .1.29 | 1.35 2.30 2.87 2.37 2.10 2.12 1.07 2.60 1.65 1.32 1.74 2.41 1.24 1.26 1.27 1.27 1.27 | .85 .32 1.60 .43 .10 .48 .87 .50 .37 .72 .77 1.12 .07 1.30 .84 1.02 .74 1.01 .84 | . 25 .05 .40 .28 .06 .14 .01 .37 .18 .30 .16 .1.25 .57 .65 | . 46 .61 1. 40 .53 .98 .39 .07 1.06 2. 84 .25 .10 1. 00 .83 1. 35 .35 .14 .82 | .99 2.36 1.90 2.27 .91 .85 .84 1.03 1.40 1.70 .54 4.00 .22 2.00 1.08 1.49 1.39 1.15 .93 .24 | 2. 38 . 13 2. 10 . 06 . 00 . 30 . 43 . 38 . 25 . 21 . 00 . 1. 90 1. 90 1. 90 . 66 . 06 . 06 . 07 . 08 . 09 . 09 . 09 . 09 . 09 . 09 . 09 . 09 | .09 .85 .10 1.29 .06 .56 .45 .02 .00 .61 .33 .10 1.32 .51 .43 .09 .81 | .08 .01 .90 .31 .66 .92 .44 .65 .18 .93 .60 1.64 .83 .15 1.57 | .90 .45 .05 1.05 1.20 1.24 .25 .17 1.17 .08 .80 1.50 1.50 1.58 3.57 1.16 1.43 | .57 .32 .10 1.25 .39 2.36 .03 .00 .10 1.49 1.20 .57 22 .27 1.09 .42 .7 | .46 .00 .28 .39 .15 .35 .32 .38 .00 .26 .02 .7 .00 .00 .36 | .82 .03 .48 T T .03 .32 2.65 .38 1.50 1.43 .00 .10 .20 .00 .1,56 .00 .27 .48 .87 | T .08 1.20 .42 .14 .13 T 1.04 1.12 .00 .98 .45 .19 1.19 .01 | . 19 . 16 . 251 . 00 . 02 . 37 . 06 . 00 . 08 1. 42 . 100 . 33 . 28 . 100 . 30 . 30 . 30 . 30 . 30 . 30 . 30 | .00 .04 .01 .19 .73 .00 .00 .00 .00 .00 .01 .49 .29 .27 1.38 .30 .3.47 | .00 .00 2.10 .06 .19 .00 .01 .16 .00 .01 .54 .36 .41 .00 .11 .00 | .00 .19 .30 .00 .75 .14 .00 .00 .04 .01 .00 .00 .00 .00 .00 .00 .00 .00 .00 | 1. 57 1. 88 .60 .26 .72 .24 .25 .90 .047 .30 .60 .51 .23 1.07 2. 36 1. 57 .90 | 13. 02 17. 88 11. 34 15. 83 13. 71 11. 59 12. 00 11. 14 11. 86 9. 28 9. 28 7. 86 6. 35 15. 37 7. 07 15. 24 14. 20 16. 28 17. 36 16. 28 13. 81 13. 82 15. 50 |

Meridian city office; amounts are for the 24 hours ending at 7 a. m., C. S. T.
 Meridian airport station; amounts are for the 24 hours ending at 12:30 a. m., C. S.
 U. S. Horticultural Field Station, about 6 miles northeast of Meridian city office.

A study of table 2 shows that the flood stage has never been reached in July before on the Leaf River at Hattiesburg, Miss., and on the Pearl River at Monticello, Miss. The July 1940 stages were the highest of record on the Pearl River at Edinburg and Jackson, Miss., for July. On the other hand, only moderately high stages prevailed on the Chickasawhay and Pascagoula Rivers as compared to July 1916, when considerably higher stages occurred dur-

ing the passage of a tropical hurricane.

Table 2.—Comparison of stages in July 1940, with previous high July stages

| Station | Previous high July stage | Year | Highest stage in July 1940 | Period of record |
|--|--|--|--|--|
| Edinburg. Jackson. Monticello Enterprise Shubuta Merrill Hattiesburg | Feet 21. 6 24. 3 11. 4 28. 2 39. 4 31. 0 14. 3 | 1934 1916 1931 1916 1916 1916 | Feet 23. 7 32. 0 21. 8 22. 3 31. 5 24. 3 19. 5 | 1904-40 1901-40 1924-40 1904-40 1905-40 1904-40 |

A conservative estimate of the damage caused by these floods is proximately \$500,000. Weather conditions in this section have approximately \$500,000. been mostly unfavorable for agriculture during most of the year. This served to delay crops, especially truck, at least 3 or 4 weeks, and as a result, agricultural losses were unusually heavy.

⁴ U. S. Sugar Plant Field Station, about 5 miles northeast of Meridian city office. All other rainfall measurements were made at 7 a. m., C. S. T.

Arkansas and Red Basins.—Slight local overflows occurred in the North Canadian River at Yukon, Okla., from July 2 to 6, in the Sulphur River in Texas from July 1 to 16, and in the Little River in Arkansas from July 2 to 7, but no damage of consequence was reported.

West Gulf of Mexico drainage.—Heavy rains in the upper tributaries of the Trinity River during the first week of July caused some flooding, principally in the upper basin. The overflow was not great enough to cause any damage

The official in charge, San Antonio, Tex., reports as follows on the floods in the Colorado, Lavaca, and Guadalupe Rivers:

A slowly moving cold front attended by excessive rains crossed central and south Texas on June 29-30 and 8 to 22 inches of precipitation occurred over a strip of country 50 miles wide by 100 miles in length. It covered large sections of eight counties centered around Bastrop, Fayette, Lavaca, and De Witt. This record rainfall caused destructive floods along the lower portion of the Colorado fall caused destructive floods along the lower portion of the Colorado and Guadalupe Rivers, and along the upper portion of the Lavaca River and its creek tributaries. Two persons were drowned on the Colorado River and seven lives were lost on the Lavaca River. Rainfall over the upper watershed of the Colorado River was sufficient to cause sharp rises, but flow was reduced to about one-third by the Buchanan and Marshall Ford Dams, and no high stages occurred above Austin, Tex.

Along the lower Colorado River, La Grange, Tex., had 12 inches of rainfall during a period of 29 hours; Smithville had 20.40 inches from the afternoon of June 29 to the morning of the 30th, with 16 inches of this amount falling between 7 p. m. and 10 a. m.—a period of 15 hours. The river did not reach flood stage at Smithville, Tex., but rose to 10 to 12 feet above flood stage from Columbus to Wharton, Tex.

Along the Guadalupe River Basin, rainfall at San Marcos, Tex., measured 6.18 inches; Cuero, Tex., 14.40 inches, with 12.40 inches of this amount falling during the 24 hours ending at 7 a. m., June 30. Further downstream, Gonzales, Tex., had 5.98 inches. The river rose 10 feet above flood stage at Gonzales, and 9.5 feet above flood stage at Victoria, Tex., with the crest passing Gonzales on July 1 and Victoria on the 3d.

The upper watershed of the small Lavaca River was subjected to

The upper watershed of the small Lavaca River was subjected to an excessive rainfall of unusual intensity and duration, and over parts of that section 22 inches of rainfall occurred within 36 hours, June 29-30. Hallettsville, Tex., approximately 20 miles below the headwaters of the Lavaca River, experienced the most costly flood in its history. It was here that seven persons were drowned, and property losses including crops and washed farming lands exceeded \$740,000.

The Nusces River reached for the content of the seven persons were drowned.

The Nueces River reached flood stage from July 2 to 5, inclusive,

but no losses occurred.

FLOOD LOSSES FOR JULY 1940

| River and drainage | Tangi- ble prop- erty | Matur- ed crops | Prospec- tive crops | Live- stock and other movable farm property | Suspen- sion of busi- ness | Total |
|--|--------------------------------|-----------------------|---------------------------|--|--|-------------------|
| EAST GULF OF MEXICO DRAINAGE | | | | | | |
| Apalachicola River | l . | | | | \$4,000 | \$4,000 |
| Choctawhatchee River Black Warrior - Tombigbee | \$3,000 | \$40 | \$300 | \$100 | 4,000 | 7, 440 |
| Rivers | 200,000 | ļ | 3, 985, 000 | ! | 33,000 | 4, 218, 000 |
| Pearl and Pascagoula Rivers | 120,000 | 80,000 | 240,000 | 13,000 | 46,000 | 499,000 |
| | 1 ' | 1 ′ | ' | 1 | ļ [*] | |
| UPPER MISSISSIPPI BASIN | 1 | ! | | | ļ | |
| Wisconsin River 1Zumbro River | 5, 743 | 4, 277 | 13, 463 5, 000 | | 13, 363 | 36, 846 5, 000 |
| | | | , 0,000 | | | 3,000 |
| WEST GULF OF MEXICO DRAINAGE | | | | | | |
| Colorado River | 76,000 | 66,000 | 8,000 | 2,000 | } - | 152,000 |
| Guadalupe River | 60,000 | 95,000 | 16,000 | 8,000 | | 179,000 |
| Lavaca River | 200,000 | 140,000 | 315,000 | 85,000 | | 740,000 |
| GULF OF CALIFORNIA DRAINAGE | , | ' | | | ŀ | |
| Pinal Creek (tributary of Salt | <u> </u> | | | 1 | l | |
| River) | 50,000 | | | | | 50,000 |
| Tributaries of Little Colorado River | 3,000 | 1,500 | | 500 | | 5,000 |
| | | | | · | | |

¹ Late in June and early in July.

FLOOD-STAGE REPORT

All dates in July unless otherwise specified]

| River and station | Flood stage | Above stages | | Orest | | |
|--|------------------------|-----------------|----------------|---------------------------------|-------------------|--|
| | Bingo | From- | То— | Stage | Date | |
| EAST GULF OF MEXICO DRAINAGE Apalachicola: Blountstown, Fla Choctawhatchee: Caryville, Fla Cahaba: Centerville, Ala | Feet 15 12 23 | 8 10 15 | 24 11 15 | Fect 18. 5 12. 0 24. 2 | 14 10-11 15 | |

FLOOD-STAGE REPORT-Continued

| River and station | Flood | Above stages— | | Crest | | |
|---|----------|------------------|-----------|-------------------------|------------------|--|
| Total and Station | stage | From | То | Stage | Date | |
| EAST GULF OF MEXICO DRAINAGE—con. | | | | | | |
| Black Warrior: | | | | | _ | |
| Lock No. 10, Tuscaloosa, Ala | 46 | 10 14 14 | 14 17 | 46. 1 49. 0 51. 0 | 13 16 | |
| Lock No. 7, Eutaw, AlaTombigbee: | 35 | . 6 | 23 | 47. 2 | 19 | |
| Aberdeen, Miss | 34 | 15 | 16 | 34.0 | 15-16 | |
| Columbus, Miss Gainesville, Ala | 29 36 | 5 7 | - 6 25 | 30. 2 46. 7 | 5 16 | |
| Gainesville, Ala Lock No. 4, Demopolis, Ala | 39 33 | 6 5 | 27 30 | 56. 9 56. 9 | 20-21 21-22 | |
| Lock No. 3. Lock No. 2. | 46 | 7 | 29 | 58.1 | 22 | |
| Lock No. 1 Leaf: Hattiesburg, Miss | 31 18 | 7 9 | (2) | 38.6 19.5 | 25-27 11 | |
| Chichasawhay: | 1 | 1 | | 1 | | |
| Enterprise, Miss | • | 10 | 13 | 22.3 | 11 15 | |
| Shubuta, Miss | 26 | 5 | 21 | 1 29.0 | 20 | |
| Pascagoula: Merrill, Miss | 22 | 10 | 20 | 24.3 | 14~15 | |
| Edinburg, Miss | | 9 7 | 18 31 | 23. 7 32. 0 | 13 19 | |
| Jackson, Miss | | r 6 | 19 | 21.8 | 9 | |
| Monticello, Miss | | 19 | 31 | 19.5 | 22-23-24 12 | |
| Columbia, Miss | 1 | 8 | 31 | 19.0 | 26 | |
| Pearl River, La | 12 | 9 | (3) | 15. 7 | 17 | |
| Mississippi system | | | ļ | | | |
| Upper Mississippi Basin | | 1 | | | | |
| Zumbro: Theilman, Minn Mississippi: Louisiana, Mo | 35 12 | (a) 11 | 11 | 36.7 | 11 | |
| Missouri Basin | | | | | ŀ | |
| Republican: Guide Rock, Nebr | 9 | 2 | 2 | 9.1 | 2 | |
| Arkansas Basin | İ | | l | | 1 | |
| Cimarron: Perkins, Okla North Cauadian: Yukon, Okla | 11 8 | 3 2 | 4 6 | 11.5 9.2 | 4 | |
| Red Basin | 1 | | 1 | l | | |
| Ouachita: Camden, Ark Little: Whitecliffs, Ark Sulphur: | 26 25 | 4 3 | 7 7 | 28. 4 27. 1 | 6 4- 5 | |
| Ringo Crossing, Tex | 18 | (1) | 7 | 26.9 | 2 | |
| Naples, Tex | | 12 3 | 16 12 | 22. 6 26. 5 | 13 6 | |
| Lower Mississippi Basin | | | | | ļ | |
| Coldwater: Coldwater, Miss | 13 | June 29 | 2 | 14.6 | June 30 | |
| WEST GULF OF MEXICO DRAINAGE | | | | | | |
| Trinity: | ı | | 1 | | | |
| Dallas, Tex Trinidad, Tex | 28 28 | 2 4 | 6 16 | 32. 4 33. 4 | 13 | |
| Colorado: | | _ | | 1 | | |
| Columbus, Tex Wharton, Tex | 24 26 | June 30 | 3 4 | 36.3 36.0 | 1 3 | |
| Guadalune: | l . | Y | _ | 1 | | |
| Gonzales, Tex | 20 21 | June 30 (1) | 6 | 30.0 29.5 | 1 3 | |
| Nueces: Three Rivers, Tex | 37 | 2 | 5 | 37.9 | 3 | |

Continued from preceding month,
 Continued into next month,
 Occasionally at or above flood stage due to operations of Dam No. 24.